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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/711,890

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Takashi Yasunaga

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08/31/2006

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EXAMINER

HO, ALLEN C

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/711,890	<b>Applicant(s)</b> YASUNAGA ET AL.	
	<b>Examiner</b> Allen C. Ho	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-10,12-14,16,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,12-14,16 and 19 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 6-8, 12-14, 16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Igarashi *et al.* (U. S. Patent No. 6,587,538 B2).

With regard to claim 1, Igarashi *et al.* disclosed a CT detector comprising: a scintillator module (240) including at least one scintillator (43); at least one indexing pin (243) connected to the scintillator module; and a collimator assembly (220) having a plurality of collimator elements (223) and a plurality of teeth (221a, 222a) configured to define a relative position of the plurality of collimator elements and a portion thereof (222b) configured to engage the at least one indexing pin, and wherein at least two of the plurality of teeth are constructed to flank (to situate at the side of) an index pin.

With regard 2, Igarashi *et al.* disclosed the CT detector of claim 1, wherein the at least one scintillator includes a plurality of scintillators uniformly arranged in a scintillator array (Fig. 3A).

With regard to claim 6, Igarashi *et al.* disclosed the CT detector of claim 1, further comprising at least one photodiode (160) configured to detect illumination of the at least one scintillator.

With regard to claim 7, Igarashi *et al.* disclosed the CT detector of claim 1 incorporated into a rotatable gantry of a CT imaging system (Fig. 1).

With regard to claim 8, Igarashi *et al.* disclosed a scintillator-collimator combination comprising: a plurality of collimator elements (223) configured to collimate x-rays projected thereat; a scintillator module (240) having a scintillator pack (43); and a comb (220) having a plurality of teeth (221a, 222a) constructed to align the plurality of collimator elements and the comb is constructed to engage the scintillator module and align the scintillator module relative to the plurality of collimator elements.

With regard to claim 12, Igarashi *et al.* disclosed the scintillator-collimator combination of claim 8, configured to be optically coupled to a photodiode array (160) and configured to detect illumination from the scintillator pack and output electrical signals response thereto.

With regard to claim 13, Igarashi *et al.* disclosed the scintillator-collimator combination of claim 8, incorporated into a CT imaging system designed to acquire diagnostic data of a medical patient (Fig. 1).

With regard to claim 14, Igarashi *et al.* disclosed a CT system comprising: a rotatable gantry having a bore centrally disposed therein (required to collect CT projection data at a plurality of projection angles of a subject); a table movable for and aft through the bore and configured to position a subject for CT data acquisition (required to move a subject in and out of the bore); a high frequency electromagnetic energy projection source (11) positioned within the

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rotatable gantry; a detector array (20) disposed within the rotatable gantry, the detector array including: a plurality of scintillator modules (240), each having a scintillator array and an indexing pin (243); a collimator assembly (220) having a plurality of collimator plates (223); and a detector support having at least one comb (220) of alignment teeth (221a, 222a), the alignment teeth constructed to align the plurality of collimator plates, and the detector support is constructed to engage an indexing pin to align a scintillator array with the plurality of collimator plates.

With regard to claim 16, Igarashi *et al.* disclosed the CT system of claim 14, wherein the alignment teeth define a uniform spacing between collimator plates of the plurality of collimator plates (Fig. 9B).

With regard to claim 19, Igarashi *et al.* disclosed the CT system of claim 14, wherein the indexing pin laterally extends beyond an end of a respective scintillator array (Fig. 8A).

### ***Allowable Subject Matter***

3. Claim 20 is allowed.
4. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

5. Applicant's arguments filed 21 June 2006 with respect to the drawings have been fully considered and are persuasive. The objections of the drawings have been withdrawn.

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6. Applicant's arguments filed 21 June 2006 with respect to the specification have been fully considered and are persuasive. The objection of the specification has been withdrawn.

7. Applicant's arguments filed 21 June 2006 with respect to claims 9, 10, and 20 have been fully considered and are persuasive. The rejection of claims 9, 10, and 20 under 35 U.S.C. 102(e) as being anticipated by Igarashi *et al.* (U. S. Patent No. 6,587,538 B2) has been withdrawn.

8. Applicant's arguments filed 21 June 2006 have been fully considered but they are not persuasive.

The applicants argue that Igarashi *et al.* failed to disclose a plurality of collimator elements and a portion thereof configured to engage the at least one indexing pin. This argument is not persuasive and is not applicable to every claim.

Claim 1 recites "a collimator assembly having a plurality of collimator elements and a plurality of teeth configured to define a relative position of the plurality of collimator elements and a portion thereof configured to engage the at least one indexing pin, and wherein at least two of the plurality of teeth are constructed to flank an index pin". The examiner interprets "a portion thereof" to be a portion of the collimator assembly. Furthermore, Merriam-Webster defines "to flank" as to be situated at the side of. Thus, Igarashi *et al.* disclosed a portion thereof (222b) configured to engage the at least one indexing pin, and wherein at least two of the plurality of teeth are constructed to flank (to situate at the side of) an index pin.

Claim 8 recites "a comb having a plurality of teeth constructed to align the plurality of collimator elements and constructed to engage the scintillator module and align the scintillator module relative to the plurality of collimator elements". As interpreted by the examiner, Igarashi

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*et al.* disclosed a comb (220) having a plurality of teeth (221a, 222a) constructed to align the plurality of collimator elements and the comb is constructed to engage the scintillator module and align the scintillator module relative to the plurality of collimator elements, which reads on the claim language.

Claim 14 recites "a detector support having at least one comb of alignment teeth, the alignment teeth constructed to align the plurality of collimator plates, and constructed to engage an index pin to align a scintillator array with the plurality of collimator plates". As interpreted by the examiner, Igarashi *et al.* disclosed a detector support having at least one comb (220) of alignment teeth (221a, 222a), the alignment teeth constructed to align the plurality of collimator plates, and the detector support is constructed to engage an indexing pin to align a scintillator array with the plurality of collimator plates, which reads on the claim language.

Therefore, the rejections are being maintained.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Galish *et al.* (U. S. Patent No. 6,687,334 B2) disclosed a comb (32) having a plurality of teeth (40).
- (2) Hase *et al.* (U. S. Patent No. 5,099,134) disclosed a comb (9) having a plurality of teeth (7, 8).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Allen C. Ho, Ph.D.  
Primary Examiner  
Art Unit 2882

24 August 2006